WISCONSIN ASTHMA PLAN 2009-2014

WISCONSIN ASTHMA COALITION

Children's Health Alliance of Wisconsin

Wisconsin Asthma Plan 2009-2014

Created by the Wisconsin Asthma Coalition and funded in part by the Wisconsin Department of Health Services through a U.S. Centers for Disease Control and Prevention Cooperative Agreement (Award Number 5U59EH524190-05 – *Addressing Asthma from a Public Health Perspective*).

The Wisconsin Asthma Coalition would like to acknowledge Children's Health Alliance of Wisconsin for managing the coalition and facilitating the development of the *Wisconsin Asthma Plan 2009-2014*.

From the Secretary of the Wisconsin Department of Health Services

Asthma is a chronic inflammatory airway disease that afflicts hundreds of thousands of people in Wisconsin. Addressing this critical public health issue can help reduce asthma-related hospitalizations and emergency department visits, decrease absences from school and work, eliminate persistent health disparities in asthma-related health outcomes, and improve the quality of life for people with asthma and their families.

The Wisconsin Asthma Plan represents the blueprint for addressing asthma in Wisconsin for the next five years. This updated plan builds on the efforts of a broad range of statewide partners in implementing the statewide asthma plan that was published in 2003, and sets ambitious and important goals and objectives for the state's public health system to address from 2009-2014. This plan is a product of the collaboration of Children's Health Alliance of Wisconsin, Department of Health Services' Division of Public Health, the U.S. Centers for Disease Control and Prevention, and the broad range of representatives from health care, public health and advocacy organizations that comprise the Wisconsin Asthma Coalition. The coalition sought and received input from organizations and individuals from across Wisconsin, and this plan reflects their thoughtful comments.

As the Secretary of the Department of Health Services, I wish to acknowledge the members of the Wisconsin Asthma Coalition, Executive Committee and workgroups for their dedicated efforts in developing this plan. I am pleased to endorse the Wisconsin Asthma Plan, and look forward to working with the Wisconsin Asthma Coalition to help reduce the burden of asthma in our state.

Karen E. Timberlake
Secretary, Wisconsin Department of Health Services

From the Chair of the Wisconsin Asthma Coalition

As Chair of the Wisconsin Asthma Coalition, I am pleased to present the *Wisconsin Asthma Plan 2009-2014*. This document represents the best efforts of the coalition's leadership and members to develop a strategic statewide plan to reduce the burden of asthma as a public health problem in Wisconsin.

Asthma affects the lives of many people in Wisconsin, including children, parents, teachers, health care and child care providers, and employers. The burden of asthma is disproportionately large within racial and ethnic minority communities in Wisconsin, and new strategies are required to address these disparities. Since the publication of the state's first asthma plan in 2003, much work has been carried out to build and maintain statewide asthma partnerships and to provide and disseminate asthma surveillance data. These partnerships and data have been used to prioritize and implement interventions to reduce the burden of asthma in Wisconsin. This plan seeks to provide the blueprint by which asthma can most effectively be addressed in the next five years.

I wish to acknowledge the efforts of all those who helped create this plan and thank them for the ideas and energy they brought to this process. I hope you will seek ways to achieve the important goals and objectives in this plan, and thus improve the lives of people with asthma in Wisconsin.

Neal Jain, MD
Chair, Wisconsin Asthma Coalition

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Acronyms

ACAAI	American College of Allergy, Asthma & Immunology
ACT	Asthma Control Test
AE-C	Certified Asthma Educator
AEI	Asthma Educator Institute
ALA/W	American Lung Association of Wisconsin
Alliance	Children's Health Alliance of Wisconsin
BREATHE	Benefits by Reducing Exacerbations of Asthma Through Home Education
BRFSS	Behavior Risk Factor Surveillance System
CDC	Centers for Disease Control and Prevention
CHHS	Children's Hospital and Health System
DHS	Wisconsin Department of Health Services
DNR	Wisconsin Department of Natural Resources
DPI	Wisconsin Department of Public Instruction
ED	Emergency department
FAM Allies	Fight Asthma Milwaukee Allies
MCO	Managed care organization
NAECB	National Asthma Educator Certification Board
NIH asthma guidelines	National Asthma Education and Prevention Program Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma
OWB	Outdoor wood boiler
WAC	Wisconsin Asthma Coalition
WIC	Women, Infants, and Children
WRA	Work-related asthma

Executive summary

Asthma is a chronic lung disease that causes inflammation and narrowing of the airways. While the exact cause of asthma is unknown, it can be properly managed by taking appropriate measures. These measures include routine health care visits, elimination or reduction of environmental asthma triggers, pharmacological treatment and patient education. The *2003 Wisconsin Asthma Plan* laid the foundation for the Wisconsin Asthma Coalition (WAC) and its partners to improve asthma management in Wisconsin and was successfully implemented in a number of capacities. The *Wisconsin Asthma Plan 2009-2014* identifies additional goals set forth by WAC and seeks to be equally successful in its accomplishments.

Data from the *Burden of Asthma in Wisconsin 2007* (DHS, 2007) indicates that continued statewide efforts are necessary to address this public health issue. The report summarizes a variety of asthma data including prevalence, associated costs, disease management, emergency department (ED) and hospitalization visit rates, and mortality. Lifetime asthma prevalence has reached an all-time high of 13 percent in both Wisconsin children and adults, and costs the state over $60 million annually in hospitalizations and ED visits. In 2005, more than 5,500 Wisconsin residents were hospitalized and more than 22,000 sought ED care for asthma. Significantly more adults with self-reported current asthma perceive their health status as fair or poor compared to adults without asthma. Asthma was the underlying cause of death in an average of 74 deaths per year in Wisconsin (2000-2005).

Addressing disparities in the *Wisconsin Asthma Plan 2009-2014*

The intent of the *Wisconsin Asthma Plan 2009-2014* is to focus all activities on disparately impacted populations in Wisconsin. The overall burden of asthma cannot be reduced without resolving the issues that contribute to the disproportionate burden of asthma in the state. Data from the *Burden of Asthma in Wisconsin 2007* drive the activities included in the *Wisconsin Asthma Plan 2009-2014* with careful assessment of how health disparities could best be identified, measured and addressed.

Individuals with asthma are disproportionately affected across age categories, gender, race and ethnicity, geographic regions and socio-economic status. Across age categories, children under age 5 have the highest hospitalization rate (29.6 per 10,000) and ED visit rate (93.7 per 10,000) in Wisconsin. By gender, males are more severely impacted by asthma during childhood, while females are disproportionately affected after puberty.

Race and ethnicity. At state and national levels, rates of asthma-related adverse

health outcomes continue to disproportionately affect low-income and minority populations. Among racial groups, African Americans have the highest lifetime prevalence of asthma (19 percent, 2002-2005), are hospitalized at 5 times the rate of whites (36.6 versus 7.1 hospitalizations per 10,000, 2005) and have a 3.5 times higher rate of asthma mortality than whites (41.2 versus 12.0 deaths per million, 2000-2005).

Geographic regions. Milwaukee County is the most populous, racially and ethnically diverse, and urbanized county in the state. It ranks second among counties for asthma hospitalizations (21.0 per 10,000, 2003-2005) and has the highest ED visit rate (96.3 per 10,000, 2003-2005). Menominee County, largely comprised of Native Americans, has the third highest hospitalization rate (20.9 per 10,000, 2003-2005) and the second highest ED rate in the state (73.4 per 10,000, 2003-2005).

Socio-economic status. Asthma prevalence in adults appears to be inversely associated with income level. Overall trends show a decrease in current asthma prevalence with an increase in income.

Vision and mission

The vision and mission of WAC stem from surveillance data in the *Burden of Asthma in Wisconsin* and the *National Asthma Education and Prevention Program Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma* (NIH asthma guidelines) (U.S. Department of Health and Human Services, 2007).

Vision: Individuals with asthma in Wisconsin will attain optimal health and quality of life and asthma will be prevented to the extent possible.

Mission: Develop and implement a sustainable statewide action plan that expands and improves the quality of asthma education, prevention, management, and services, and reduces the disproportionate burden of asthma in disparately impacted populations.

Overarching goals

The overarching goals of the *Wisconsin Asthma Plan 2009-2014* flow from the vision and mission statements of WAC.

- Expand and improve the quality of asthma education, prevention, management and services.
- Decrease the disproportionate burden of asthma in disparately impacted populations.

The *Wisconsin Asthma Plan 2009-2014* encompasses the asthma goals set forth in *Healthiest Wisconsin 2010* (DHS, 2002), Wisconsin's statewide public health plan, and *Healthy People 2010* (U.S. Department of Health and Human Services, 2000), the nation's health plan. *Healthy People 2010* identifies the following asthma-specific goals:

- Reduce asthma deaths.
- Reduce hospitalizations for asthma.
- Reduce hospital ED visits for asthma.
- Reduce activity limitations among persons with asthma.
- Reduce the number of school or work days missed by persons with asthma due to asthma.
- Increase the proportion of persons with asthma who receive formal patient education, including information about community and self-help resources, as an essential part of the management of their condition.
- Increase the proportion of persons with asthma who receive appropriate asthma care according to the NIH asthma guidelines.

Wisconsin Asthma Plan 2009-2014 goals

The *Wisconsin Asthma Plan 2009-2014* is divided into four priorities: surveillance, standardized quality care, education and environment. This reduces duplication and increases the ability for workgroups to partner.

The specific goal and associated objectives for each priority of the *Wisconsin Asthma Plan 2009-2014* are:

Surveillance goal: Improve and expand asthma surveillance in Wisconsin.

Objective A: Develop a comprehensive Wisconsin asthma statistics report every three years.

Objective B: Expand Wisconsin asthma surveillance to include schools; Women, Infants, and Children (WIC) centers; and Head Start programs.

Objective C: Investigate the relationship between occupational and environmental exposures and adverse asthma outcomes.

Objective D: Establish new surveillance partnerships.

Standardized quality care goal: Increase implementation of the current NIH asthma guidelines for optimal diagnosis and management of asthma by all health care providers.

Objective A: Promote asthma educator certification.

Objective B: Build capacity within health care systems for identifying and monitoring patients with asthma.

Objective C: Increase utilization of standardized asthma management to improve the

quality of care.

Objective D: Build the business case and secure reimbursement for asthma case management.

Objective E: Implement asthma case management.

Objective F: Evaluate asthma quality measures and innovative payment strategies.

Objective G: Increase access to asthma care.

Education goal: Increase asthma education consistent with the current NIH asthma guidelines.

Objective A: Identify and address gaps and needs in asthma education and outreach.

Objective B: Increase knowledge and skills to manage asthma among parents, students and school personnel.

Objective C: Increase awareness of work-related asthma (WRA).

Objective D: Disseminate professional education and resources.

Environment goal: Reduce or control environmental factors associated with asthma.

Objective A: Reduce exposure to asthma triggers in home environments.

Objective B: Reduce exposure to asthma triggers in public indoor environments.

Objective C: Reduce exposure to asthma triggers in school environments.

Objective D: Reduce exposure to asthma triggers in outdoor environments.

Conclusion

WAC has made great strides in improving asthma management since the release of the *Wisconsin Asthma Plan 2003,* but the burden of this disease and its disproportionate impact remains a priority. The *Wisconsin Asthma Plan 2009-2014,* focuses on addressing asthma disparities to reduce the overall burden of asthma in Wisconsin. WAC's dedicated and determined statewide partners will work strategically and diligently to meet the challenges for the next five years and beyond.

Burden of asthma

Asthma is a chronic lung disease that causes inflammation and narrowing of the airways. Symptoms include wheezing, chest tightness, shortness of breath and coughing. A variety of factors are known to trigger asthma episodes, including allergens (dust, mold, cockroaches, animal fur, etc.), irritants (tobacco smoke, air pollution, chemicals, etc.), viral infections, exercise, cold air and stress.

The exact cause of asthma is unknown, thus making its prevention problematic. However, by taking appropriate measures, it can be properly managed. Those living with asthma can experience a better quality of life through management measures including routine health care visits for proper assessment and monitoring, elimination or reduction of environmental asthma triggers, pharmacological treatment and patient education. The NIH asthma guidelines identify these measures as the four main components of effective asthma management.

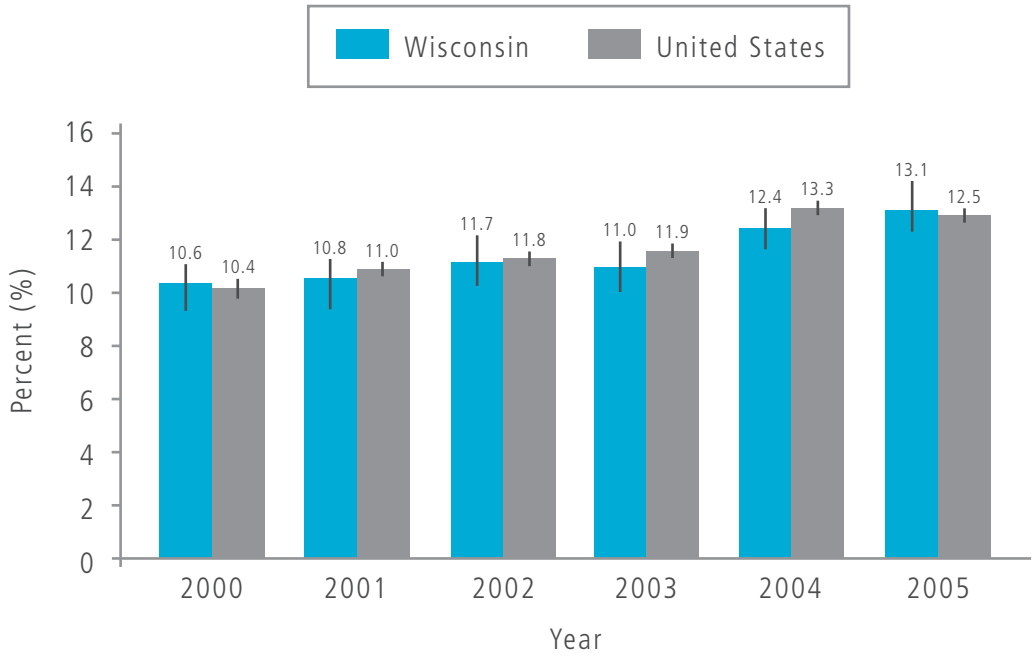
The *Burden of Asthma in Wisconsin 2007* (DHS, 2007) highlights the need for continued statewide efforts to address this public health priority. Lifetime asthma prevalence has reached an all-time high of 13 percent in both Wisconsin children and adults, and costs the state over $60 million annually in asthma-related hospitalizations and ED visits. The report summarizes a variety of asthma data including prevalence, associated costs, disease management, ED visit and hospitalization rates, and mortality.

Determination of Statistical Significance. Since much of the data used in this report comes from surveys, confidence intervals, as indicated by the error bars, have been included when available, as an indication of the margin of error associated with the survey results. A "wide" confidence interval indicates that a relatively small number of individuals were included in the survey and the estimate is less reliable.

Prevalence. Like adults, Wisconsin children have experienced a gradual increase in lifetime and current asthma prevalence. Lifetime prevalence is estimated based on respondents who answer yes to the question, "Have you ever been told by a doctor, nurse, or other health professional that you had asthma?" Current prevalence estimates are based on respondents who answer yes to the lifetime prevalence question and yes to the question, "Do you still have asthma?"

Wisconsin boys have a higher lifetime asthma prevalence than girls. However, adult females have a statistically significant higher lifetime and current asthma prevalence than adult males.

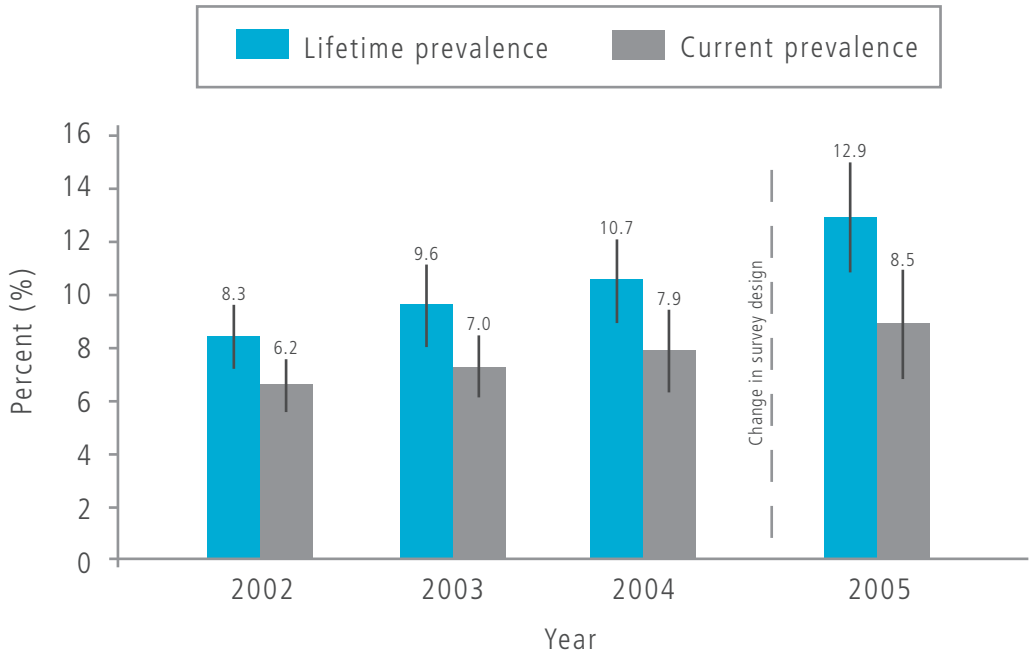
Figure 1. Lifetime asthma prevalence by year in Wisconsin and U.S. adults, 2000-2005*.



Data source: 2000-2005 Wisconsin Behavioral Risk Factor Surveillance System, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health and Family Services and 2000-2005 Behavioral Risk Factor Surveillance System Online Prevalence Data.

*The asthma question on the 2000 BRFSS was worded slightly different ("Did a doctor ever tell you that you have asthma?"). Estimates from this year are not directly comparable with estimates from 2001 through 2005.

Figure 2. Lifetime and current asthma prevalence by year, Wisconsin children, 2002-2005.

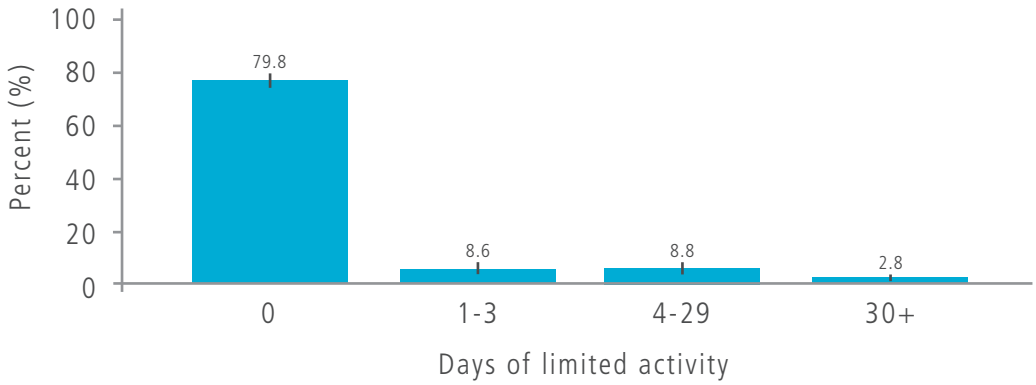


Data source: 2002-2005 Wisconsin Behavioral Risk Factor Surveillance System, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health and Family Services.

Asthma management and quality of life. Significantly more adults with self-reported current asthma perceive their health status as fair or poor compared to adults without asthma. Data from 2002-2005 show nearly 51 percent of Wisconsin adults with current asthma reported having asthma attacks during the past year. In 2003, nearly 48 percent of Wisconsin children with current asthma reported experiencing an asthma attack in the previous year.

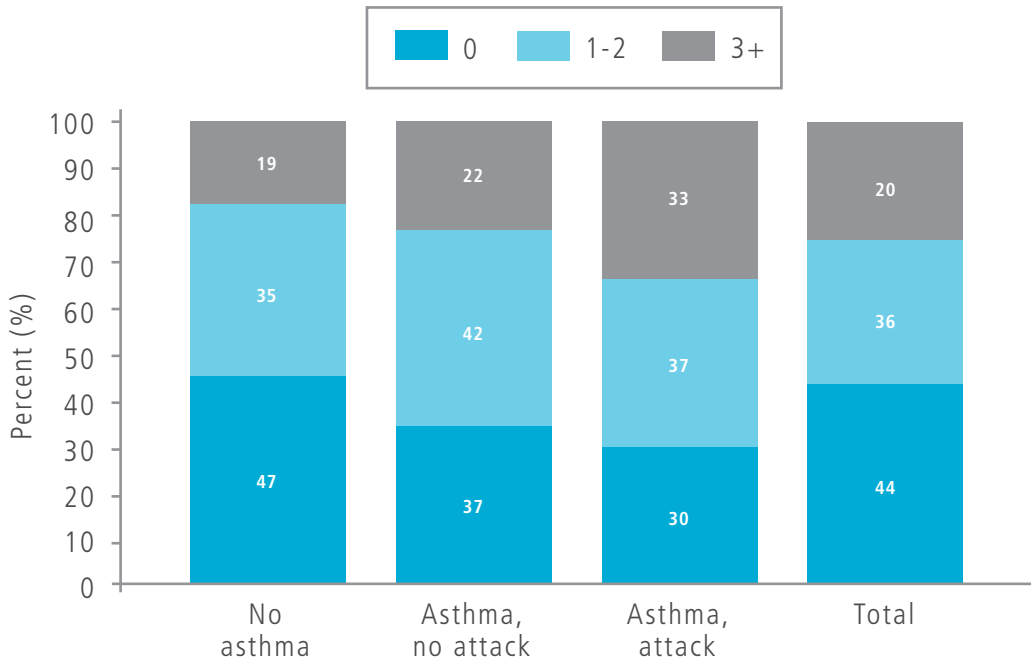
Twenty percent of adults with current asthma reported inability to carry out usual activities one or more days during the last month due to asthma (2002-2005). In 2006, students diagnosed with asthma reported missing more days of school in the last 30 days than other students.

Figure 3. Number of activity limited days in the past year due to asthma, Wisconsin adults with current asthma, 2002-2005.



Data source: 2002-2005 Wisconsin Behavioral Risk Factor Surveillance System, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health and Family Services.

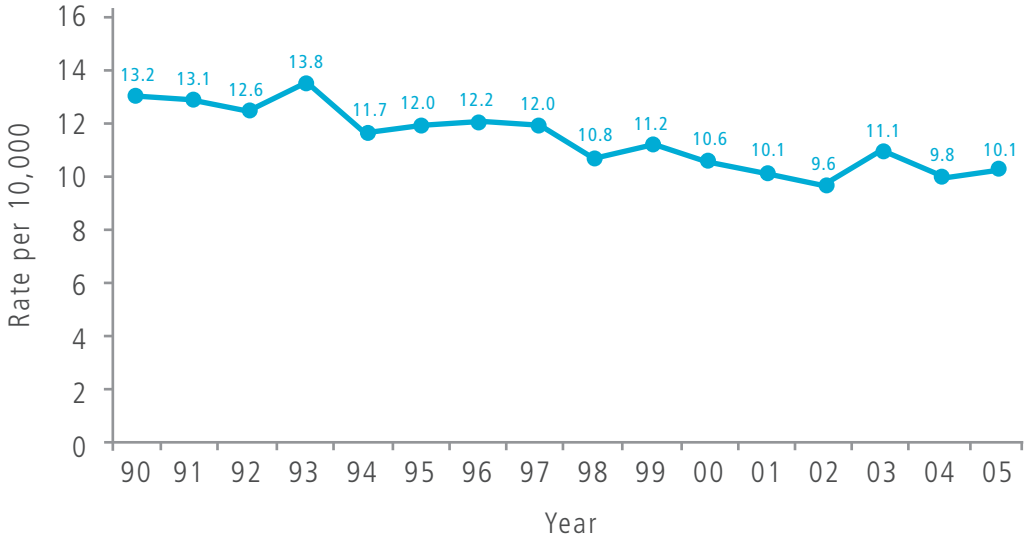
Figure 4. Number of missed school days in the past 30 days by asthma status, Wisconsin public middle and high school students, 2006.



Data source: 2006 Youth Tobacco Survey, Bureau of Community Health Promotion, Division of Public Health, Wisconsin Department of Health and Family Services.

Health care utilization. In 2005, more than 5,500 Wisconsin residents were hospitalized and more than 22,000 sought ED care for asthma. Over the past 10 years there has been a general decline in Wisconsin asthma hospitalization rates per 10,000, peaking in 1993 with 13.8 and decreasing to a low of 9.6 in 2002. The overall Wisconsin rate of asthma ED visits per 10,000 remained steady from 41.9 in 2002 to 40.9 in 2005.

Figure 5. Age-adjusted* asthma hospitalization rates per 10,000, Wisconsin residents, 1990-2005.**

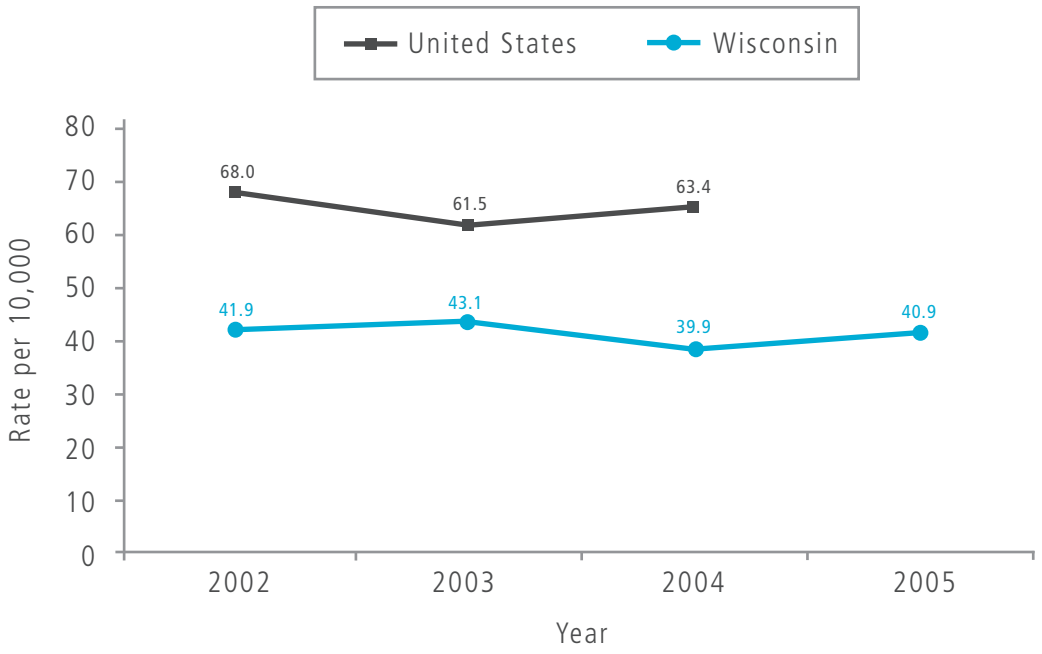


*Age-adjusted to the year 2000 U.S. standard population.

**Asthma listed as the principal diagnosis (ICD-9-CM codes 493.00 – 493.92).

Data source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Figure 6. Age-adjusted* asthma ED visit rates per 10,000, Wisconsin (2002-2005) and the United States (2002-2004).**



*Age-adjusted to the year 2000 U.S. standard population.

**Asthma listed as the principal diagnosis (ICD-9-CM codes 493.00 – 493.92).

Data source: ED visit discharge file, Bureau of Health Information and Policy; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

2002-2004 National Hospital Discharge Survey, Centers for Disease Control and Prevention.

Mortality. Between 2000 and 2005, asthma was the underlying cause of death in an average of 74 deaths per year in Wisconsin. Additionally, an average of 163 death certificates per year listed asthma as a contributing cause of death.

Work-related asthma. Data from the Behavior Risk Factor Surveillance System (BRFSS) and Wisconsin Asthma Union Survey indicate 5-14 percent of adults with asthma have WRA.

Wisconsin Asthma Coalition

Since the inception of WAC in 2001, the coalition has grown to over 265 members and 10 local asthma coalitions. Children's Health Alliance of Wisconsin (Alliance), affiliated with Children's Hospital and Health System (CHHS), coordinates the coalition and facilitates the creation and implementation of the *Wisconsin Asthma Plan.*

Executive Committee and workgroups

The WAC Executive Committee meets monthly to guide, monitor and make recommendations to create and implement the *Wisconsin Asthma Plan.* The workgroups implement the activities within the plan.

Vision and mission

The vision and mission of WAC stem from surveillance data in the *Burden of Asthma in Wisconsin 2007* report and the NIH asthma guidelines.

Vision: Individuals with asthma in Wisconsin will attain optimal health and quality of life and asthma will be prevented to the extent possible.

Mission: Develop and implement a sustainable statewide action plan that expands and improves the quality of asthma education, prevention, management and services, and reduces the disproportionate burden of asthma in disparately impacted populations.

Membership opportunities

WAC provides support to its members through semi-annual coalition meetings, information sharing, networking and partnership opportunities. Semi-annual coalition meetings provide national and local speakers who share tools, resources and information members can apply locally. WAC meetings also provide opportunities for networking through exhibitor tables, workgroup discussions and informal conversations.

Your Dose of Oxygen, an electronic newsletter, provides information on WAC resources and events, trainings, grant opportunities and asthma-related research. The WAC listserve provides a venue for WAC members to gather information by posting questions or comments and obtaining responses from colleagues.

Overview of the *Wisconsin Asthma Plan 2009-2014*

Overarching goals

The overarching goals of the *Wisconsin Asthma Plan 2009-2014* flow from the vision and mission statements of WAC.

- Expand and improve the quality of asthma education, prevention, management and services.
- Decrease the disproportionate burden of asthma among disparately impacted populations.

The *Wisconsin Asthma Plan 2009-2014* encompasses the asthma goals set forth in *Healthiest Wisconsin 2010* (DHS, 2002), Wisconsin's statewide public health plan, and *Healthy People 2010* (U.S. Department of Health and Human Services, 2000), the nation's health plan. *Healthiest Wisconsin 2010* identifies asthma as a statewide chronic disease priority and an environmental and occupational health issue. *Healthy People 2010* identifies the following asthma-specific goals:

- Reduce asthma deaths.
- Reduce hospitalizations for asthma.
- Reduce hospital ED visits for asthma.
- Reduce activity limitations among persons with asthma.
- Reduce the number of school or work days missed by persons with asthma due to asthma.
- Increase the proportion of persons with asthma who receive formal patient education, including information about community and self-help resources, as an essential part of the management of their condition.
- Increase the proportion of persons with asthma who receive appropriate asthma care according to the NIH asthma guidelines.

Wisconsin Asthma Plan 2009-2014 goals

Surveillance: Improve and expand asthma surveillance in Wisconsin. (The Centers for Disease Control and Prevention (CDC) defines surveillance as a dynamic process in which data on the occurrence and distribution of health or disease in a population are collected, collated, analyzed and disseminated.)

Standardized quality care: Increase implementation of the current NIH asthma guidelines for optimal diagnosis and management of asthma by all health care providers.

Education: Increase asthma education consistent with the current NIH asthma guidelines.

Environment: Reduce or control environmental factors associated with asthma.

Addressing disparities in the *Wisconsin Asthma Plan 2009-2014*

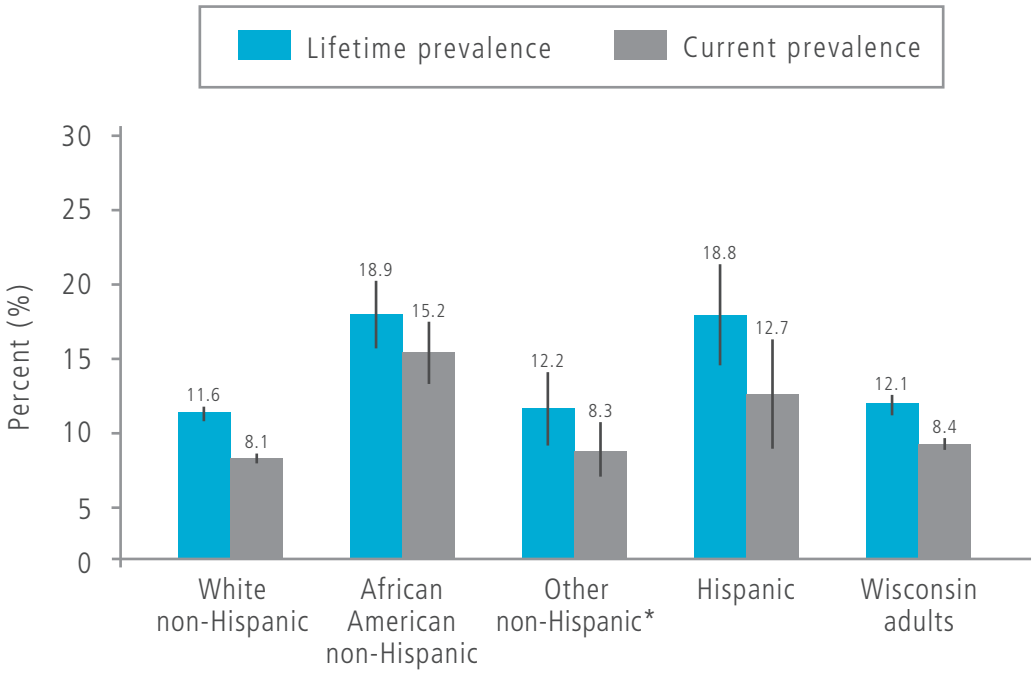
The intent of the *Wisconsin Asthma Plan 2009-2014* is to focus all activities on disparately impacted populations in Wisconsin. The overall burden of asthma cannot be reduced without resolving the issues contributing to the disproportionate burden of asthma. Services beyond the traditional scope of public health are required to affect disparities in health status and adverse asthma-related health outcomes. For example, the disparities workgroup will be involved in reviewing all intervention strategies within the plan for cultural appropriateness. While it is not reiterated in each objective, a deliberate effort will be made to ensure all strategies are reviewed.

Individuals with asthma are disproportionately affected across age, gender, race and ethnicity, geographic regions and socio-economic status.

Age and gender. Across age categories, children under age 5 have the highest hospitalization rate (29.6 per 10,000) and ED visit rate (93.7 per 10,000) in Wisconsin. According to gender, males are more severely impacted by asthma during childhood, while females are disproportionately affected after puberty.

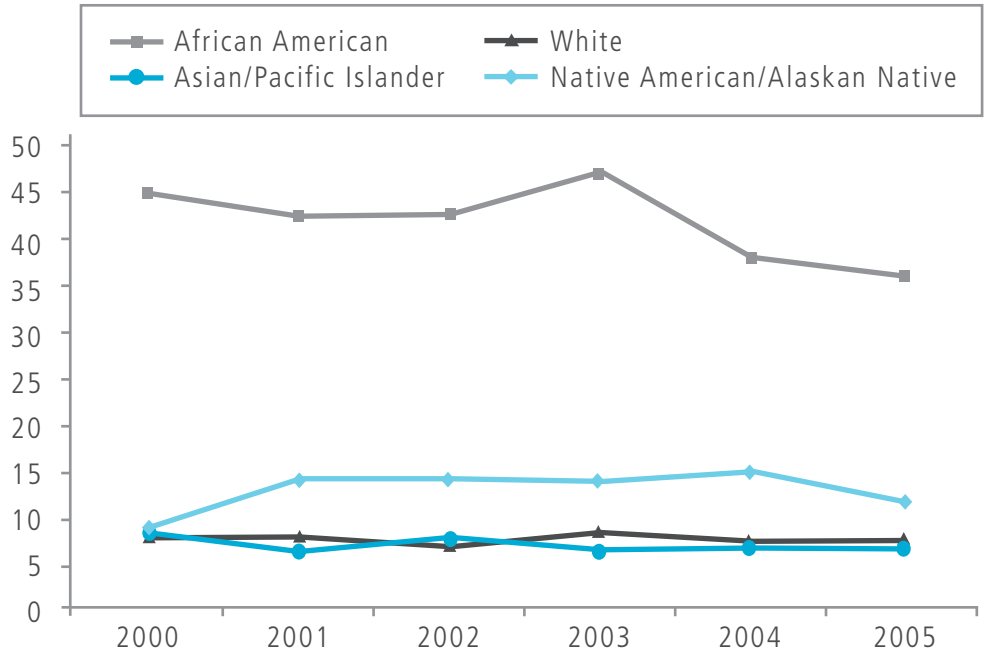
Race and ethnicity. At state and national levels, rates of asthma-related adverse health outcomes continue to disproportionately affect low-income and minority populations. Among racial groups, African Americans have the highest prevalence of asthma (19 percent, 2002-2005), are hospitalized at 5 times the rate of whites (36.6 versus 7.1 hospitalizations per 10,000, 2005) and have a 3.5 times higher rate of asthma mortality than whites (41.2 versus 12.0 deaths per million, 2000-2005). Non-Hispanic African American public middle and high school students reported higher lifetime asthma prevalence in comparison to non-Hispanic white students (25.3 percent versus 16.8 percent, 2006). Native Americans also have higher asthma hospitalization rates than whites (11.7 versus 7.1 hospitalizations per 10,000, 2005).

Figure 7. Lifetime and current asthma prevalence by race and ethnicity, Wisconsin adults, 2002-2005.



Data source: 2002-2005 Wisconsin Behavioral Risk Factor Surveillance System, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health and Family Services.

Figure 8. Age-adjusted asthma* hospitalization rates ** by race[a] and year, Wisconsin, 2000-2005.



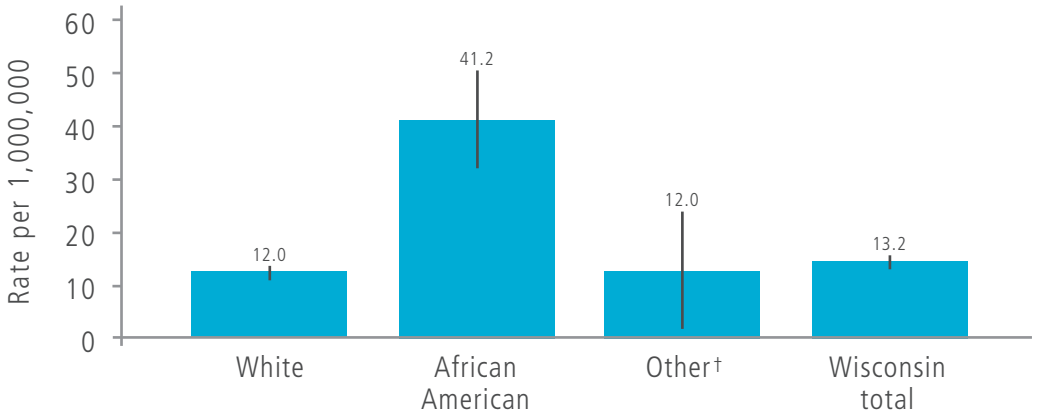
*Age-adjusted to the year 2000 U.S. standard population.

**Asthma listed as the principal diagnosis (ICD-9-CM codes 493.00 – 493.92).

[a]Race groups include both Hispanic and non-Hispanic individuals.

Data source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Figure 9. Six-year age-adjusted* asthma** mortality rates by race[a], Wisconsin residents, 2000-2005.



*Standard 2000 U.S. population used for direct age-adjustment.

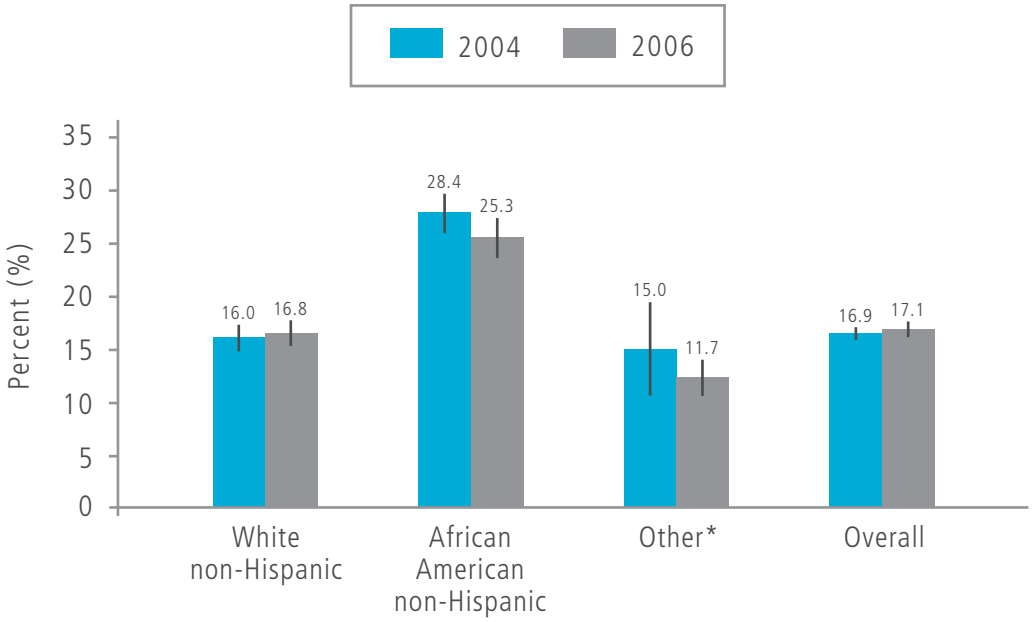
**Asthma listed as the underlying cause of death (ICD-10 codes J45 and J46).

[a]Race groups include both Hispanic and non-Hispanic individuals.

†The 'other' category is comprised of Asians, Native Hawaiians, Pacific Islanders, Native Americans, Alaskan Natives and those of unknown race.

Data source: 2000-2005 Vital Records Office, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health and Family Services.

Figure 10. Lifetime asthma prevalence among Wisconsin public middle and high school students by race and ethnicity, 2004 and 2006.



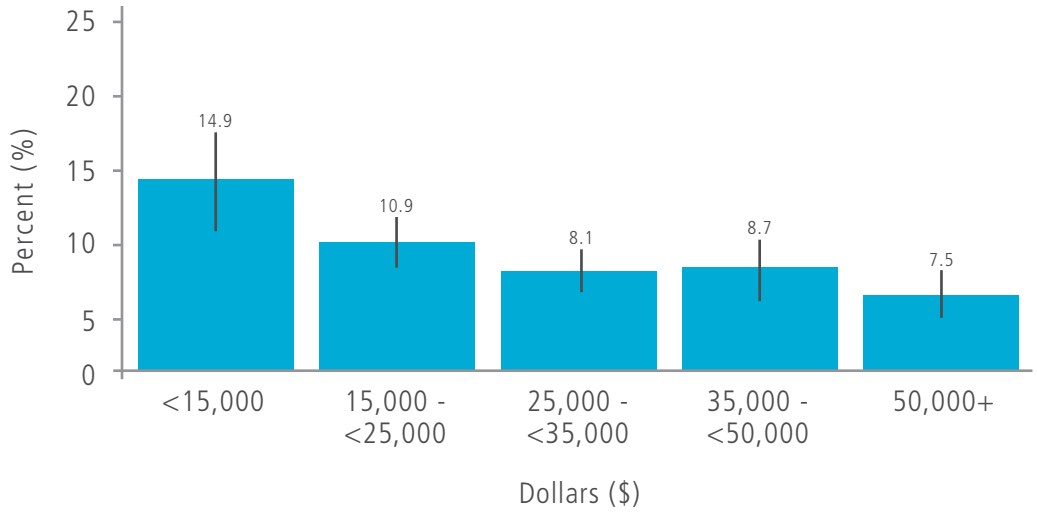
Data source: 2004 and 2006 Youth Tobacco Survey, Bureau of Community Health Promotion, Division of Public Health, Wisconsin Department of Health and Family Services.

*The 'other' category is comprised of Asians, Native Hawaiians, Pacific Islanders, Native Americans, Alaskan Natives, Hispanics and Latinos. These groups were combined due to low number of sampled respondents.

Geographic regions. Milwaukee County is the most populous, racially and ethnically diverse, and urbanized county in Wisconsin. It ranks second among Wisconsin counties for asthma hospitalizations (21.0 per 10,000, 2003-2005) and has the highest ED visit rate (96.3 per 10,000, 2003-2005). Menominee County, which is largely comprised of Native Americans, has the third highest hospitalization rate (20.9 per 10,000, 2003-2005) and the second highest ED rate in Wisconsin (73.4 per 10,000, 2003-2005).

Socio-economic status. Asthma prevalence in adults appears to be inversely associated with income level. Overall trends show a decrease in current asthma prevalence with an increase in income. Adults with an annual household income of less than $15,000 had higher current asthma prevalence than those with a household income of greater than $25,000.

Figure 11. Current asthma prevalence by household income level, Wisconsin adults, 2004-2005.



Data source: 2004-2005 Wisconsin Behavioral Risk Factor Surveillance System, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health and Family Services.

Key accomplishments from the *2003 Wisconsin Asthma Plan*

The *2003 Wisconsin Asthma Plan* served as the foundation for WAC and its partners to improve asthma management in Wisconsin. The following sampling of accomplishments demonstrates how the plan was implemented. Numerous other activities also occurred throughout the state.

Surveillance

Historically, asthma surveillance in Wisconsin was limited and in need of expansion beyond existing datasets. Stakeholders need to be aware of the data to effectively select activities to reduce the burden of asthma.

Examples of accomplishments:

- The Wisconsin Department of Health Services (DHS) expanded the quantity and quality of asthma surveillance data in Wisconsin through partnerships with organizations, such as Fight Asthma Milwaukee (FAM) Allies, Wisconsin Department of Public Instruction (DPI) and Wisconsin Hospital Association.
- DHS released the *Burden of Asthma in Wisconsin* report in 2004 and 2007.
- DHS created an Environmental Public Health Tracking Program linking surveillance data and environmental monitoring data.

Clinical care

To ensure health care providers achieve the goals of asthma management, it is necessary to provide professional education and resources, build capacity within health care systems for identifying and monitoring patients with asthma, and standardize asthma quality measurement.

Examples of accomplishments:

- The *Allergist Outreach Asthma Education Program for Primary Care Practices* trained over 880 primary care providers and other clinical staff to improve the diagnosis and management of asthma. Significant improvements were documented in severity classification, assessment of dust as a trigger, writing an asthma action plan, primary care providers teaching patients, staff teamwork and nurses review of inhaler technique. The program was sponsored by the American Lung Association of Wisconsin (ALA/W), the Alliance, CHHS, FAM Allies, Medical College of Wisconsin, Wisconsin Academy of Pediatrics Foundation, Wisconsin Allergy Society and WAC.
- WAC created the *Asthma Focused Follow-up Visit* (2007), a simple algorithm to be used during a primary care asthma visit which also can be incorporated into an

electronic medical records system.

- The *Asthma Care Fax* (2008), created by WAC, the Pharmacy Society of Wisconsin and ALA/W, is now used by pharmacists to identify and alert primary care providers of patients who excessively use short-acting beta agonists.
- Waukesha Elmbrook Health Care established an Asthma Clinical Quality workgroup to improve the care provided to pediatric asthma patients ages 4 to 17. Waukesha Elmbrook Health Care monitors use of the Asthma Control Test (ACT) (QualityMetric Incorporated, 2002) and score documentation, asthma severity status and administration of the influenza vaccine, as well as the number of ED visits, urgent care visits and inpatient hospitalizations.

Enhanced covered services

To improve asthma care in Wisconsin, it is essential to extend the type and extent of coverage by third-party reimbursement. This can be accomplished by building a business case proving asthma disease management is cost-effective.

Examples of accomplishments:

- WAC gathered information from communities nationwide showing asthma disease management is cost-effective.
- Successful asthma disease management programs were highlighted at WAC meetings. Numerous Wisconsin organizations are looking at replicating these cost-effective programs.

Education

It is essential that asthma educators and educational materials follow a standard of care based on the NIH asthma guidelines. In addition, health care providers, community agencies and schools should understand basic asthma management, its triggers and what to do in an asthma emergency.

Examples of accomplishments:

- WAC continues to review written educational materials for usability and compliance with the NIH asthma guidelines using a tool from Allies Against Asthma.
- WAC created a public awareness radio advertisement, targeted to college students, on tobacco smoke's impact on asthma.
- As of 2008, 60 percent of 107 certified asthma educators (AE-C) in Wisconsin have participated in ALA/W's *Asthma Educator Institute* (AEI). AEI was designed to provide participants with the knowledge and tools necessary for the successful assessment and management of patient asthma. It also provides tools and resources to help prepare for the National Asthma Educator Certification Board (NAECB) exam.

Environment

Asthma is greatly affected by environmental factors, both indoor and outdoor. Environmental interventions have been shown to reduce asthma triggers.

Examples of accomplishments:

- Prior to the requirement to use low-sulfur fuel, WAC partnered with the Wisconsin Department of Natural Resources (DNR) and Laidlaw school bus company (serving Milwaukee and West Milwaukee) to pay the difference for diesel school buses to use low-sulfur fuel.
- DNR retrofitted school buses with catalytic converters to lower sulfur dioxide emissions.
- WAC and DHS created a brochure, *Controlling Asthma in the Home: A Guide for Tenants and Landlords* (2008), on healthy home information. The brochure was translated in Spanish and Hmong.

Work-related asthma

The extent of WRA in Wisconsin is unknown. Few educational materials have been developed to inform employers, employees and health care providers about WRA.

Examples of accomplishments:

- DHS implemented a survey to determine the prevalence of WRA among union workers. Of the 1,837 completed questionnaires, 13.61 percent met the criteria for WRA.
- Industry-specific WRA issue briefs were posted on the WAC Web site.
- WAC members received information on WRA strategies at WAC meetings.

Disparities

Residents of Milwaukee and Menominee counties have higher rates of asthma hospitalizations and ED visits than observed in the general Wisconsin population. Disparately impacted populations with limited access to primary care services and increased exposure to adverse environmental conditions are at a higher risk for asthma.

Examples of accomplishments:

- Menominee Tribal Clinic housed a respiratory therapist to provide asthma management and education. Efforts included promotion and implementation of a three-part asthma education program, provision of educational materials, community asthma education and updating the clinic's asthma patient database.
- FAM Allies partnered with Family House on a parent and neighborhood organizing program for parents, guardians, primary caregivers and families of children with asthma. The goal is to engage participants in asthma management activities. In addition, parents of children with asthma are referred to FAM Allies' nurse education,

case management and care coordination team.

- WAC created the *Cultural Competency Review Tool* (2005) to evaluate the cultural appropriateness of printed asthma educational materials. The tool was designed to set a standard of care, score asthma educational materials based on this standard, and provide suggestions for improvement. The tool consists of seven domains: language, normative cultural values, folk illnesses, parent/patient beliefs, health care provider practices, visuals and overall assessment. In September 2007, the results were published in the *Journal of Ethnicity & Disease,* Leave No Asthmatic Child Behind.
- FAM Allies led efforts to gather information on culturally appropriate asthma educational materials for Wisconsin African American, Native American, Spanish-speaking and Hmong families. Information was gathered through listening sessions held statewide with representatives from each cultural group.

Public policy

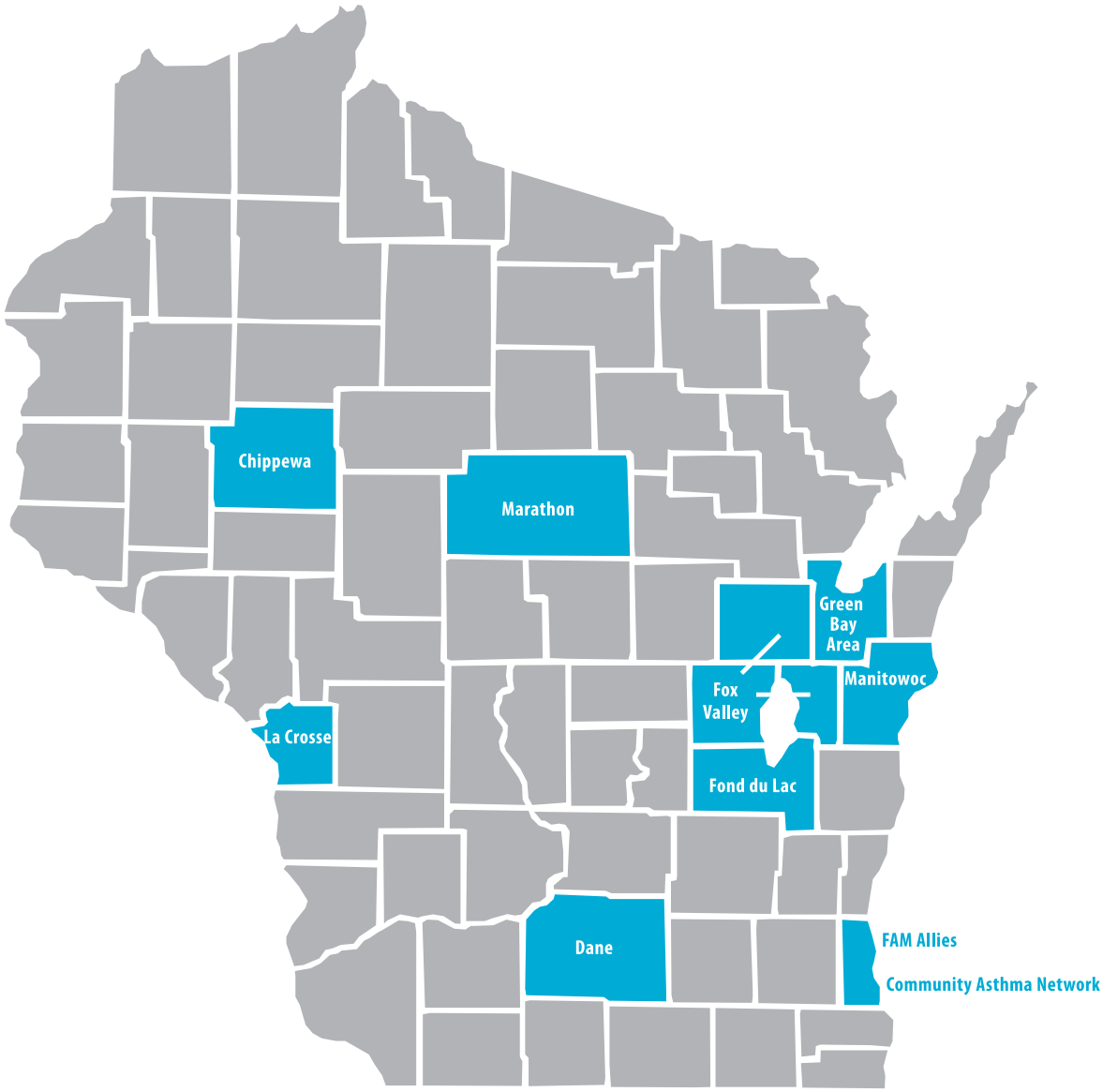
Policy change is often required to improve asthma management at a system level. To implement policy change it is essential to promote awareness and understanding of asthma to public officials and high-level decision-makers.

Examples of accomplishments:

- The *Asthma Inhaler Law,* Wisconsin Statute 118.291 (2005), was expanded to allow all students at public, private and charter schools to carry inhaled medications at school with parental and physician permission.
- ALA/W created a universal consent form, the *Asthma Inhaler Medication Form,* for students to obtain permission to carry inhaled medications at school.
- WAC continues to support local and state smoke-free-workplace ordinances through testimony and letter campaigns.
- One-on-one educational meetings were held with members of the Wisconsin State Senate and Assembly, and all members of the Wisconsin State Legislative Council. As a result, a Legislative Asthma Symposium was organized by the Joint Legislative Council to offer information on asthma trends and issues in Wisconsin.
- ALA/W houses a legislative network, keeping participants informed and ready to respond to public policy issues.

Wisconsin Asthma Coalition local asthma coalitions

This map depicts the location of each of the 10 WAC local asthma coalitions.



WAC local asthma coalition highlights

The local asthma coalitions are working to implement activities guided by the *Wisconsin Asthma Plan.* Below is an example of one accomplishment for each local coalition from the *2003 Wisconsin Asthma Plan*.

Chippewa County Asthma Coalition

Distributed the ACT and Child ACT through the school district newsletter and employee pay checks.

Community Asthma Network (West Allis - West Milwaukee)

Provided ALA/W's *Exercise & Asthma* program for recreation department staff.

Dane County Asthma Coalition

Implemented standardized asthma treatment guidelines for children and adults seen in the ED.

Fight Asthma Milwaukee (FAM) Allies

Implemented care coordination and case management for high-risk children with asthma through partner care systems.

Fond du Lac Asthma Management Coalition

Implemented a school nurse referral program to identify students with uncontrolled asthma and refer them to a primary care provider for asthma management and follow up.

Fox Valley Asthma Coalition

Provided ALA/W's *Asthma 101* to school staff.

Green Bay Area Asthma Coalition

Coordinated annual one-day camp for children with asthma.

La Crosse Partners

Conducted oral survey of Hmong families in the WIC program. This showed an overall lack of asthma knowledge and an interest in gaining information through videos, brochures and in-person education.

Manitowoc County Asthma Coalition

Provided ALA/W's *Counting on You* program for child care providers.

Marathon County Asthma Coalition

Implemented ED program referring asthma patients to the local health department for nurse follow up.

The planning process

The *2003 Wisconsin Asthma Plan,* a five-year plan, was successfully implemented in a number of capacities. Asthma management has experienced major advances and the public health environment in Wisconsin has continued to evolve. As a result, the WAC Executive Committee determined a revised plan addressing current needs and utilization of existing resources was required.

Workgroup reorganization

WAC workgroups were reorganized to streamline implementation. The public policy workgroup was expanded to also include advocacy. The environment and work-related asthma workgroups have been combined as the activities for each often parallel each other. A schools workgroup was created to increase the awareness and involvement of schools. A local development and communication workgroup was created to focus on the development and support of local asthma coalitions, communication between WAC and the local coalitions, and communication strategies to disseminate information within WAC.

WAC workgroups:

- Clinical care.
- Disparities.
- Education.
- Environment/work-related asthma.
- Enhanced covered services.
- Local development and communication.
- Public policy and advocacy.
- Schools.
- Surveillance.

Wisconsin Asthma Plan 2009-2014 revision kick-off meeting

WAC members and other key stakeholders participated in a working meeting to:

- Determine objectives.
- Identify action steps.
- Discuss linkages to other workgroups.
- Discuss potential costs of implementation and resources needed.
- Identify performance measures.

Data from the *Burden of Asthma in Wisconsin 2007* was presented to drive the activities in the *Wisconsin Asthma Plan 2009-2014.* Related to the data, each workgroup included

how health disparities could best be identified, measured and addressed.

Streamlining the *Wisconsin Asthma Plan 2009-2014*

Draft plans created by each workgroup were compiled and reviewed by the WAC Executive Committee. To reduce duplication and increase the ability for workgroups to work together, the Executive Committee divided the revised plan into four sections: surveillance, standardized quality care, education and environment. Each section includes activities to be completed by multiple workgroups.

Section goals:

- Surveillance - Improve and expand asthma surveillance in Wisconsin.
- Standardized quality care - Increase implementation of the current NIH asthma guidelines for optimal diagnosis and management of asthma by all health care providers.
- Education - Increase asthma education consistent with the current NIH asthma guidelines.
- Environment - Reduce or control environmental factors associated with asthma.

Listening sessions

The *Wisconsin Asthma Plan 2009-2014* incorporates input from over 20 listening sessions held statewide. Listening sessions were held with a wide range of stakeholders including health care providers, local asthma coalitions, health plan representatives, advocacy groups, local health department staff and boards, and business organizations. The draft plan objectives and action steps were presented to determine if the plan would help partners improve asthma management, and to gather recommendations for inclusion in the final plan. Individual comments also were gathered through *Your Dose of Oxygen* electronic newsletter, the WAC Web site and listserve, and from organizations that could not host listening sessions.

Surveillance

Goal: Improve and expand asthma surveillance in Wisconsin.

Objective A: Develop a comprehensive **Wisconsin asthma statistics report** every three years.

Action steps	Target date	Lead workgroup(s)
1. Assess the data needs of end users and stakeholders.	2009, 2012	**Surveillance,** Disparities
2. Identify and obtain hospitalization, risk factor, Medicaid and other data as specified by CDC and other stakeholders.	2009, 2012	**Surveillance**
3. Perform statistical analysis, interpret results and write report.	2010, 2013	**Surveillance**
4. Review draft by WAC and other stakeholders.	2010, 2013	**Surveillance**
5. Produce, present and disseminate the report and a short summary report.	2010, 2013	**Surveillance**

Objective B: Expand Wisconsin asthma surveillance to include **schools, WIC centers and Head Start** programs.

Action steps	Target date	Lead workgroup(s)
1. Continue to support the addition of asthma-related questions on the Youth Risk Behavior Survey and Youth Tobacco Survey.	Annually	**Surveillance,** Schools
2. Develop an improved system for tracking school absenteeism rates among students with asthma.	2009	**Schools,** Disparities, Surveillance
3. Determine feasibility, and if possible, add asthma questions to WIC's Real-time Online Statewide Information Environment.	2009	**Surveillance,** Public policy and advocacy

4. Conduct Head Start based asthma surveillance. a. Expand ALA/W's *Asthma 101* evaluation questions (e.g., percent of children with asthma, number of children taking asthma medications and use of asthma action plans). b. Pilot *Asthma 101* with enhanced evaluation and assess ability to expand to additional sites.	2010	**Surveillance,** Education

Objective C: Investigate the relationship between **occupational and environmental exposures and adverse asthma outcomes.**

Action steps	Target date	Lead workgroup(s)
1. Investigate opportunities, and if feasible, take necessary steps to utilize datasets that capture daily changes in asthma symptoms (e.g., GPS devices in quick relief holsters to assess location, dates and time of use, and symptom diaries).	2009, ongoing	**Surveillance**
2. Collaborate with health and environmental partners to link ozone and particulate matter data with asthma health outcomes data.	2010	**Surveillance,** Environment/work-related asthma
3. Develop protocols and evaluation approaches for measuring the prevalence of WRA, including sector-specific prevalence estimates.	2010	**Environment/work-related asthma,** Surveillance
4. Increase the quantity and quality of survey data on WRA, including the addition of WRA questions to the BRFSS.	2010	**Surveillance,** Environment/work-related asthma
5. Collect data on indoor environments (e.g. secondhand smoke, molds, dust mites) and link with asthma outcomes data.	2012	**Surveillance,** Environment/work-related asthma

Objective D: Establish **new surveillance partnerships.**

Action steps	Target date	Lead workgroup(s)
1. Develop Web-based query systems to share county or community-level asthma data with stakeholders, local health officials, researchers and the general public.	2009	**Surveillance**
2. Partner with BadgerCare, BadgerCare Plus and federally qualified health centers to explore collecting and sharing aggregate data on asthma diagnoses and care for disparately impacted populations.	2010	**Surveillance,** Disparities, Environment/work-related asthma
3. Explore data sources, such as Regional Health Information Organizations, to measure implementation of: a. Current NIH asthma guidelines. b. Standardized quality of asthma care.	2012	**Enhanced covered services,** Clinical care, Surveillance

Standardized quality care

Goal: Increase implementation of the current NIH asthma guidelines for optimal diagnosis and management of asthma by all health care providers.

Objective A: Promote **asthma educator certification.**

Action steps	Target date	Lead workgroup(s)
1. Partner with organizations working with disparately impacted populations to encourage minority and bilingual asthma educators to become AE-C.	2009, ongoing	**Disparities, Education**
2. Identify funding opportunities to provide scholarships to attend ALA/W's AEI.	2009, ongoing	**Education**
3. Provide networking opportunities for AE-C's and those seeking certification.	2009, ongoing	**Education**
4. Provide a list of resources and individuals willing to mentor those seeking certification.	2009, ongoing	**Education**
5. Increase marketing of AE-C's by promoting: a. Benefits of becoming certified. b. Benefits to having AE-C on staff, including improved outcomes.	2009, ongoing	**Local development and communication,** Education
6. Identify funding opportunities for WAC members to take the NAECB examination to become AE-C.	2010, ongoing	**Disparities, Education**
7. Identify and work with health care providers to add AE-C's to staff.	2010, ongoing	**Education**

Objective B: Build capacity within health care systems for **identifying and monitoring patients with asthma.**

Action steps	Target date	Lead workgroup(s)
1. Develop a template adaptable to any health care system to facilitate follow-up plans for asthma patients who overutilize emergency asthma care services. a. Track patients after ED, urgent care and walk-in visits with specific focus on disparately impacted populations. b. Notify primary care provider following asthma exacerbation utilizing system similar to *Asthma Care Fax* for pharmacists. c. Provide referral to primary care provider for continued asthma care. d. Identify process to ensure communication within and between systems.	2011, ongoing	**Clinical care,** Disparities, Enhanced covered services, Public policy and advocacy
2. Implement pharmacy-based tools to improve asthma management. a. Increase use of the *Asthma Care Fax* by pharmacists. b. Update the *Asthma Care Fax* as needed.	2012	**Clinical care**
3. Track aggregate level patient utilization data, including: a. Rescue inhaler use via monitoring refills. b. Regular use of controller medications. c. Missed scheduled health care provider visits.	2013	**Surveillance,** Clinical care, Disparities, Enhanced covered services, Schools
4. Develop and disseminate education for health care providers and health care systems on utilization of rescue inhaler refill claims data to identify high-risk patients with asthma.	2014	**Clinical care,** Education, Enhanced covered services, Surveillance

Objective C: Increase utilization of **standardized asthma management** to improve the quality of care.

Action steps	Target date	Lead workgroup(s)
1. Continue implementation of the *Allergist Outreach Asthma Education Program.*	2009, ongoing	**Clinical care**
2. Update *Asthma Focused Follow-up Visit* as needed.	2009	**Clinical care**
3. Promote use of *Asthma Focused Follow-up Visit* by primary care providers.	2010, ongoing	**Clinical care,** Local development and communication, Surveillance
4. Document implementation of *Asthma Focused Follow-up Visit.*	2010, ongoing	**Clinical care**

Objective D: Build the business case and secure **reimbursement for asthma case management.**

Action steps	Target date	Lead workgroup(s)
1. Continue participation in state pay-for-performance contract discussions with Medicaid.	2009, ongoing	**Enhanced covered services,** Clinical care, Public policy and advocacy
2. Summarize asthma case management research to describe improved outcomes and decreased cost, and disseminate to: a. Employers. b. Health benefit managers. c. Hospitals. d. Managed care organizations (MCO). e. Pharmacies. f. Health care providers and systems. g. DHS health care benefits program.	2010, ongoing	**Enhanced covered services,** Local development and communication
3. Secure comprehensive coverage for tobacco cessation counseling and medications.	2011	**Enhanced covered services,** Public policy and advocacy

4. Explore and if feasible, take necessary steps to secure public health financing to provide enhanced cost-sharing for community-based asthma services.	2012	**Public policy and advocacy,** Enhanced covered services
5. Secure coverage for professional asthma education.	2014	**Enhanced covered services,** Disparities, Public policy and advocacy
6. Secure comprehensive coverage for asthma-related durable medical equipment and supplies.	2014	**Enhanced covered services,** Public policy and advocacy
7. Support statewide efforts working toward universal health care coverage.	Ongoing	**Disparities,** Enhanced covered services, Public policy and advocacy

Objective E: Implement **asthma case management.**

Action steps	Target date	Lead workgroup(s)
1. Create asthma case management toolkit, Benefits by Reducing Exacerbations of Asthma Through Home Education (BREATHE).	2010	**Enhanced covered services**
2. Present BREATHE toolkit to encourage implementation by: a. Self-insured employers. b. Health benefit managers. c. MCO's. d. DHS health care benefits program.	2010	**Enhanced covered services,** Local development and communication
3. Secure funding to implement BREATHE.	2011	**Enhanced covered services**
4. Collect data from BREATHE partners. a. Pharmacy claims data. b. ED rates. c. Hospitalization rates.	2012, ongoing	**Enhanced covered services,** Surveillance

5. Work with the Pharmacy Society of Wisconsin to incorporate the *Asthma Care Fax* into the Wisconsin Pharmacy Quality Collaborative medication therapy management program.	2012	**Enhanced covered services**

Objective F: Evaluate asthma **quality measures** and innovative **payment strategies.**

Action steps	Target date	Lead workgroup(s)
1. Identify and promote pay-for-performance measures being utilized for asthma (e.g., Healthcare Effectiveness Data and Information Set (HEDIS)) to: a. Health care providers. b. Health care systems. c. Health plans.	2010	**Enhanced covered services, Surveillance**
2. Track pay-for-performance outcomes.	2011	**Enhanced covered services, Surveillance**
3. Include pay-for-performance outcomes in asthma case management research.	2013, ongoing	**Enhanced covered services**
4. Provide recommendations to partners on how to improve pay-for-performance outcomes.	2013, ongoing	**Enhanced covered services**

Objective G: Increase **access to asthma care.**

Action steps	Target date	Lead workgroup(s)
1. Educate policymakers, decision-makers and the public about gaps in community access.	2009, ongoing	**Disparities,** Local development and communication, Public policy and advocacy
2. Update and disseminate an annual summary of prescription assistance programs.	2009, ongoing	**Disparities,** Clinical care, Enhanced covered services, Public policy and advocacy

3. Replicate or create list of community clinics for distribution to patients.	2010, ongoing	**Disparities**
4. Educate the disparately impacted population on the importance of prevention, the use of primary care services and how to access the services.	2010, ongoing	**Disparities,** Education, Enhanced covered services, Schools

Education

Goal: Increase asthma education consistent with the current NIH asthma guidelines.

Objective A: Identify and address gaps and needs in **asthma education and outreach.**

Action steps	Target date	Lead workgroup(s)
1. Provide technical support to local asthma coalitions.	Ongoing	**Local development and communication,** Education
2. Enhance and publicize the WAC Web site.	Ongoing	**Local development and communication,** Disparities, Education
3. Update and implement the review protocol for written asthma education materials.	2009	**Education,** Clinical care, Disparities
4. Review existing materials to ensure they are culturally appropriate.	2009, ongoing	**Disparities,** Education
5. Identify educational programs and outreach utilized by a variety of target audiences.	2010	**Education,** Clinical care, Disparities
6. Link partners to and distribute educational resources.	2010, ongoing	**Education,** Local development and communication
7. Implement educational programming utilizing train-the-trainer strategies.	2010, ongoing	**Education**
8. Prioritize gaps and needs in asthma education and identify or create needed materials.	2011, ongoing	**Education, Disparities,** Surveillance
9. Develop and implement a process for monitoring asthma education and outreach provided statewide.	2012	**Education,** Surveillance

Objective B: Increase knowledge and skills to manage asthma among **parents, students and school personnel.**

Action steps	Target date	Lead workgroup(s)
1. Provide asthma education to parents, schools and community groups.	2009, ongoing	**Schools,** Disparities, Education
2. Identify and implement an elementary, middle and high school asthma education curriculum.	2009, ongoing	**Schools,** Clinical care, Disparities, Education
3. Provide asthma education to school personnel, such as ALA/W's *Asthma 101.*	2009, ongoing	**Schools,** Disparities, Education
4. Collaborate with partners to identify or create and distribute educational materials.	Ongoing	**Schools,** Disparities, Education
5. Promote World Asthma Day and Asthma Awareness Month (May) in schools.	Annually	**Schools,** Disparities, Education
6. Increase the use of asthma action plans.	Ongoing	**Schools,** Clinical care, Disparities, Local development and communication

Objective C: Increase awareness of **WRA.**

Action steps	Target date	Lead workgroup(s)
1. Increase local asthma coalition capacity to address WRA.	2009	**Environment/work-related asthma,** Local development and communication

2. Identify or develop and disseminate a WRA program for office and educational settings.	2010	**Environment/work-related asthma,** Education, Local development and communication, Schools
3. Develop industry-specific WRA educational materials (e.g. agriculture, food and beverage service, flavorings, truck bed liners).	2011	**Environment/work-related asthma,** Disparities, Education
4. Increase WRA knowledge and capacity among health care providers.	2012	**Environment/work-related asthma,** Education, Local development and communication
5. Prioritize and implement WRA educational interventions for workplace health and safety staff.	2012	**Environment/work-related asthma,** Education, Local development and communication
6. Integrate WRA programming in public and private sector wellness programs.	2013	**Environment/work-related asthma,** Disparities, Education, Enhanced covered services

Objective D: Disseminate **professional education and resources.**

Action steps	Target date	Lead workgroup(s)
1. Promote the use of asthma management tools (e.g., ACT, Child-ACT and Asthma Therapy Assessment Questionnaire (Merck & Co., Inc., 2008)).	2009, ongoing	**Clinical care,** Education, Local development and communication
2. Monitor use of tools available on the WAC Web site.	2009, ongoing	**Clinical care,** Surveillance
3. Disseminate tools on the NIH guidelines that are concise and easy to implement.	2009, ongoing	**Clinical care**

4. Increase involvement of local asthma coalitions to facilitate implementation of the current NIH asthma guidelines.	2009, ongoing	**Clinical care,** Local development and communication
5. Promote use of spirometry and/or other non-invasive objective measures.	2010, ongoing	**Clinical care,** Local development and communication
6. Implement provider training on culturally appropriate asthma information.	2010, ongoing	**Disparities,** Education

Environment

Goal: Reduce or control environmental factors associated with asthma.

Objective A: Reduce exposure to asthma triggers in **home environments.**

Action steps	Target date	Lead workgroup(s)
1. Support activities promoting smoke-free homes.	2009, ongoing	**Environment/work-related asthma**
2. Increase collaboration with home environmental programs, such as lead poisoning and healthy homes.	2010, ongoing	**Environment/work-related asthma**
3. Increase patient knowledge of home-based asthma triggers.	2010, ongoing	**Environment/work-related asthma,** Education, Local development and communication
4. Increase capacity of health care providers and public health professionals who visit homes to identify and address home-based asthma triggers.	2010, ongoing	**Environment/work-related asthma,** Clinical care, Enhanced covered services
5. Implement peer-to-peer asthma education program for parents.	2012	**Environment/work-related asthma,** Education
6. Identify and distribute resources for abatement.	2012	**Environment/work-related asthma**
7. Implement home-based asthma trigger reduction model among children enrolled in child care centers.	2013	**Environment/work-related asthma,** Education, Schools

Objective B: Reduce exposure to asthma triggers in **public indoor environments.**

Action steps	Target date	Lead workgroup(s)
1. Communicate benefits of smoke-free policy change for people with asthma.	2009, ongoing	**Environment/work-related asthma,** Local development and communication
2. Support smoking ban in public places and indoor workplaces.	2009	**Public policy and advocacy,** Education, Environment/work-related asthma
3. Increase knowledge of cleaning and sanitation practices that reduce exposure to asthma triggers.	2012	**Environment/work-related asthma,** Education
4. Identify and disseminate best practices for building operations that reduce exposure to asthma triggers. a. Review existing optimal building operation award programs. b. Develop and implement awards criteria.	2013	**Environment/work-related asthma**

Objective C: Reduce exposure to asthma triggers in **school environments.**

Action steps	Target date	Lead workgroup(s)
1. Promote anti-idling bus policies. a. Explore existing Wisconsin Department of Transportation and DPI rules concerning school bus idling policies. b. Explore anti-idling bus legislation in school zones. c. Increase knowledge and adoption of recommended bus idling practices.	2009	**Public policy and advocacy, Schools,** Environment/work-related asthma
2. Provide guidance for school personnel on how to respond to air quality alerts.	2009	**Schools,** Environment/work-related asthma

3. Identify and apply for retrofitting technology grants for diesel school buses.	2010	**Environment/work-related asthma,** Public policy and advocacy, Schools
4. Support the enactment of indoor air quality policies that reduce asthma trigger exposure.	2010	**Public policy and advocacy,** Environment/work-related asthma, Schools
5. Modify and implement Minnesota's environmental walk-through school inspection program.	2011	**Schools,** Environment/work-related asthma
6. Develop and administer asthma friendly school awards program.	2011	**Schools,** Environment/work-related asthma
7. Enforce existing and emerging child care smoke-free policies.	2012	**Environment/work-related asthma,** Schools
8. Identify or develop environmental assessment for child care settings.	2012	**Environment/work-related asthma,** Schools

Objective D: Reduce exposure to asthma triggers in **outdoor environments.**

Action steps	Target date	Lead workgroup(s)
1. Increase availability of educational resources on wood smoke, outdoor wood-fired boilers, recreational fire, leaf burning and burn barrel hazards.	2009, ongoing	**Environment/work-related asthma**
2. Provide policy development support on outdoor burning, with specific policy recommendations restricting use of outdoor wood-fired boilers.	2009, ongoing	**Public policy and advocacy,** Environment/work-related asthma

3. Re-introduce legislation granting DNR citation authority for open burning violations.	2009	**Public policy and advocacy,** Environment/work-related asthma
4. Develop and disseminate messages linking asthma to broader issues, such as smoke-free workplaces, alternative transportation and climate change.	2009	**Environment/work-related asthma,** Local development and communication, Public policy and advocacy
5. Increase public awareness of air quality alerts.	2010	**Environment/work-related asthma,** Local development and communication
6. Increase the quality of response and information provided when air quality is poor.	2010	**Environment/work-related asthma**
7. Increase knowledge and adoption of recommended anti-idling bus practices in non-school environments.	2010	**Environment/work-related asthma**
8. Ensure WAC membership in the Wisconsin Clean Diesel Coalition.	Ongoing	**Environment/work-related asthma**
9. Integrate outdoor environmental pollutant data with adverse asthma-related health outcomes data. a. Include demographics (e.g., address and data on people living in an area). b. Increase availability of locality-specific information for community and public health programs.	Ongoing	**Environment/work-related asthma,** Disparities, Surveillance
10. Support policy initiatives promoting clean transportation and other efforts to decrease air pollution.	Ongoing	**Public policy and advocacy,** Environment/work-related asthma

Expected outcomes of the *Wisconsin Asthma Plan, 2009-2014*

1. Prioritized implementation activities based on current surveillance data.
2. Decreased number of asthma deaths.
3. Decreased number of asthma hospitalizations.
4. Decreased number of asthma hospital ED visits.
5. Increased number of Medicaid recipients receiving appropriate asthma care.
6. Decreased activity limitations reported among persons with asthma.
7. Decreased number of school or work days missed by persons with asthma due to asthma.
8. Increased proportion of persons with asthma who received appropriate asthma care according to the NIH asthma guidelines (minimum of two of the following).
    a. Received written asthma action plan from health care provider.
    b. Received instruction on how to use prescribed inhalers.
    c. Received education on recognition of early signs and symptoms of asthma episodes and how to respond appropriately.
    d. Received medication regimens that prevent the need for more than one canister of short-acting inhaled beta agonists per month for relief of symptoms.
    e. Received follow-up medical care for long-term management of asthma after any hospitalization due to asthma.
    f. Received assistance with exposure recognition and reduction to environmental risk factors in home, school and work environments.
9. Increased number of persons with asthma who received asthma case management.
    a. Increased number of health plans annually that implement BREATHE.
    b. Increased number of participants annually enrolled in existing BREATHE programs.

Long-term activities

The *Wisconsin Asthma Plan, 2009-2014* sets the stage for future efforts that need to be accomplished. The following were identified as desired goals and action steps for a future plan beyond 2014.

Surveillance (relates to objective C):

Further examine the relationship between occupational and environmental exposures; identify or develop datasets to examine asthma-related incidence among migrant workers in Wisconsin.

Standardized quality care (relates to objective B):

Effectively identify and monitor patients with asthma; encourage health care systems to build a network to standardize care statewide (e.g., interoffice communication between ED, urgent care and walk-ins).

Standardized quality care (relates to objective D):

Explore and take necessary steps to implement the following once initial reimbursement has been secured for asthma case management:

1. Secure coverage of school-based asthma care and education.
2. Secure coverage of mobile care for asthma ("breath-mobile").
3. Expand transportation coverage for asthma-related ambulatory services.
4. Provide on-site environmental assessment and intervention in high-risk groups.
5. Implement first dollar coverage for preventive management:
    a. Utilize diagnostic and management tools, such as spirometry and exhaled nitric oxide (eNO).
    b. Prescribe controller medications.
    c. Provide preventive services.

Standardized quality care (relates to objective E):

Track outcomes once asthma case management programs have been implemented and a significant amount of data has been collected.

Wisconsin Asthma Coalition Executive Committee

- **Chair** ~ Neal Jain, MD, Dean Health System
- **Vice Chair** ~ Rhonda Yngsdal-Krenz, RRT, NPS, MBA, American Family Children's Hospital
- Judy Burrows, Marathon County Health Department, Marathon County Asthma Coalition
- Jennifer Cohn, MLS, Medical College of Wisconsin, Downtown Health Center, Fight Asthma Milwaukee Allies
- Nancy Dorman, Wisconsin Association of School Boards
- Rhonda Duerst, RRT-NPS, AE-C, Children's Hospital of Wisconsin
- Themis E. Flores Ramos, MBA, Wisconsin Division of Public Health
- Carola Gaines, Unity Health Insurance
- Rachel Gallagher, RN, APNP, Wisconsin Department of Public Instruction
- Claude Gilmore, Wisconsin Division of Public Health
- Erika Horstmann, PharmD, RPh, Hometown Pharmacy
- Murray Katcher, MD, PhD, Wisconsin Division of Public Health
- Todd Mahr, MD, Gundersen Lutheran Medical Center La Crosse
- John Meurer, MD, MBA, Medical College of Wisconsin, Children's Hospital of Wisconsin
- Michelle Mercure, CHES, American Lung Association of Wisconsin
- Marlis O'Brien, RRT, AE-C, Franciscan Skemp Health Care
- Karen Ordinans, Children's Health Alliance of Wisconsin
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